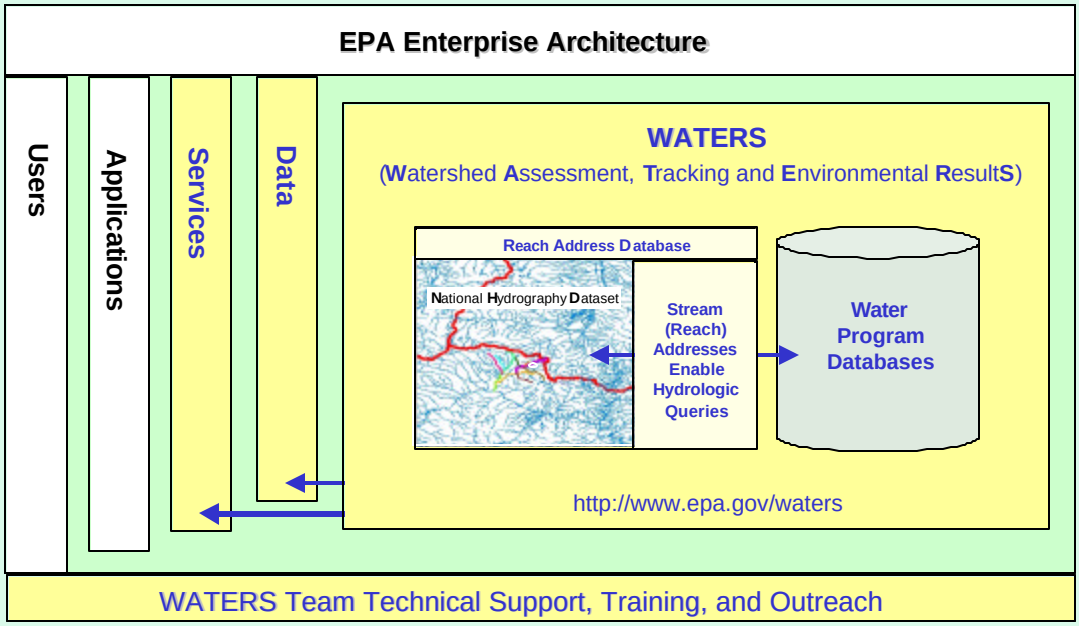
EPA / WATERS Architecture

Use of the architecture is reducing costs while enhancing information use and dissemination



What is it?

Watershed Assessment, Tracking & Environmental ResultS (WATERS) is an architecture that provides data and services to EPA. It is an integrated information resource for the nation's surface waters built upon the Agency's enterprise architecture. The EPA Office of Water (OW) has various programs that store data in associated databases. These databases are separately managed with little coordination among them. In WATERS, the program databases are connected to a larger framework-- a digital network of surface water features known as the National Hydrography Dataset (NHD). By linking to the NHD, one program database can reach another, and information can be shared across programs. These linkages enable program managers to examine relationships between programs, perform nationwide analyses, and investigate interstate water quality issues.

www.epa.gov/waters/

What does it do?

This coordination between program databases improves communication and efficiency, enabling OW to better support its mission goals and needs, as well as helping to establish a place-based component of the Exchange Network Infrastructure. The primary goal of the USEPA Office of Water is to achieve **Clean and Safe Water.** Many different OW programs work together toward achieving this goal, and WATERS can help them share important water quality information.

For More Information, contact:
Tod Dabolt
Phone: (202) 566-1186
Email: dabolt.thomas@epa.gov
Or
waters_support @epa.gov

Waters Program Components

1-WATERS Architecture
The WATERS architecture is based on the NHD framework of surface waters and indexing and encompasses all of the program databases as they are integrated using the NHD reach indexes. This architecture is enhanced with the addition of services to aid in the use of the data and in the development of applications to serve users from EPA analysts through the public. Grounded in the EPA Enterprise Architecture, the WATERS Architecture extends the power of the integrated water program data into the twenty-first century.

2-National Hydrography Dataset
The National Hydrography Dataset (NHD) combines the surface water features from USGS digital line graph data with the river reach codes developed by EPA. The NHD supports the making of maps, georeferencing, and hydrographic modeling. The NHD is used as the framework within WATERS for the addressing of environmental information.

3-NHD Reach Indexing
Reach Indexing is a common methodology designed to promote compatibility between data sets and provide the mechanism to aggregate surface water data for regional and national analysis. The addition of NHD reach indexes to program data provides the basis to perform cross-program data analyses.

4-The Reach Address Database
The Reach Address Database (RAD) is a national spatial database within the WATERS architecture. The RAD is EPA's central repository for two primary types of data-- NHD features and attributes, and program data features, usually in the form of data indexed to the NHD reach features. The RAD supports the standard spatial data storage, query, and retrieval functions; however, the central purpose and power of the RAD is the seamless, inexpensive integration of water-related program data.

5-Water Program Data
A growing number of EPA Water Program data are linked to the NHD through Reach Indexing and are available for visualization. Most program data are continuously updated and additional program data sets are planned for inclusion.

6-Services
The WATERS services are database and web based services providing user application friendly interfaces to complex analyses. These services make extensive use of the NHD and indexed program data in the RAD, and also integrate other WATERS program data in selected services. Designed as modular units, the services are being developed within a common architecture and each service will be available as it is completed.

7-Applications
WATERS empowers EPA Office of Water to meet its goal under the Clean Water Act of achieving Clean and Safe Water. Applications utilizing WATERS assist EPA analysts and decision-makers to more quickly, accurately, and efficiently assess resource allocation, provide program direction, and refine EPA guidelines, rules, and policies to meet the goal of clean and safe water. OW, OEI, and regional offices have already produced several applications, and more will be produced in the future to support additional user needs. The use of integrated data, reusable service components, and a standard architecture support more complex and efficient application development to support EPA mission.

8-Tech Support/Training/Outreach
The WATERS team provides comprehensive technical support services to WATERS partners to assist them in using the valuable resources now available. The Team provides technical support for adding program data to WATERS, training for WATERS GIS and database tools, and provides continuous outreach to current and prospective users. WATERS team members are also available for program-specific presentations and project planning sessions.